



# UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE  
United States Patent and Trademark Office  
Address: COMMISSIONER FOR PATENTS  
P.O. Box 1450  
Alexandria, Virginia 22313-1450  
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/987,616	11/15/2001	Ming-Dou Ker	06720.0074	7408

7590 08/07/2003

Finnegan, Henderson, Farabow,  
Garrett & Dunner, L.L.P.  
1300 I Street, N.W.  
Washington, DC 20005-3315

EXAMINER
----------

BENENSON, BORIS

ART UNIT	PAPER NUMBER
----------	--------------

2836

DATE MAILED: 08/07/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

# Office Action Summary

Application No.

09/987,616

Applicant(s)

KER ET AL. *CR*

Examiner

Boris Benenson

Art Unit

2836

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

## Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

## Status

- 1) ☒ Responsive to communication(s) filed on 15 November 2001.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

## Disposition of Claims

- 4) ☒ Claim(s) 1-51 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-12 and 26-49 is/are allowed.
- 6) ☒ Claim(s) 13, 15, 23-25 and 50-51 is/are rejected.
- 7) ☒ Claim(s) 14 and 16-22 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

## Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 November 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on \_\_\_\_\_ is: a) ☐ approved b) ☐ disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

## Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) ☐ All b) ☐ Some \* c) ☐ None of:  
1. ☐ Certified copies of the priority documents have been received.  
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.  
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).  
\* See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

## Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892) 4) ☐ Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) ☐ Notice of Informal Patent Application (PTO-152)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4. 6) ☐ Other: \_\_\_\_\_

***Claim Objections***

1. Claim 16 objected to because of the following informalities: Claim required the anode to be coupled to the second n-type portion, but Figures 2 and 4-7 show the cathode been connected to the second n-type portion. Appropriate correction or explanation is required.

***Claim Rejections - 35 USC § 102***

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 13 and 50 is rejected under 35 U.S.C. 102(e) as being anticipated by Yu (6,433,979). Yu disclosed an electrostatic discharge protection device using semiconductor-controlled rectifier. The device comprises:

a signal pad (Fig. 3C, Pos. 399),

a rectifier which "is represented by PNP bipolar transistor 335 and NPN bipolar transistor 345 in a constructive feedback configuration" (Col. 4, Line 67 - Col. 5, Line 2) with a first p-type portion P-type anode region (Fig. 3B, Pos. 330), contiguous with the first p-type portion a first n-type portion (320), a second p-type portion (310) contiguous with the first

Art Unit: 2836

n-type portion and a second n-type portion (340) contiguous with the second p-type portion, wherein the anode of the rectifier is coupled to the signal pad,

a first transistor having a first terminal, a second terminal and a gate terminal, wherein the first terminal is coupled to the first n-type portion of the rectifier, and

a second transistor having a first terminal, a second terminal and a gate terminal, wherein the first terminal is coupled to the second n-type portion of the rectifier, and the second terminal is coupled to the second terminal of the first transistor.

Referring to Claim 15, Yu disclosed: "The conventional LSCR is typically constructed in a P-type doped substrate 10 with an N-type doped well region 20 formed therein. A heavily doped P-type region 30 is formed in the N-type well region 20 to serve as the anode of the LSCR" (Col.1, Lines 46-50).

Referring to Claims 23-25, the second p-type portion of the rectifier comprises p-type substrate, the first n-type portion of the rectifier comprises an n-well in a semiconductor substrate and the first p-type portion of the rectifier comprises p-type diffused region inside the n-well.

***Allowable Subject Matter***

3. Claims 14 and 17-22 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. Claims 1-12 and 26-49 are allowed.

5. Independent Claims 1,26, 38 and Claim 14 are allowable because none of the prior art of record disclose an electrostatic discharge protection circuit comprising a voltage coupling circuit having a first terminal, a second terminal, a third terminal, and a fourth terminal, wherein the first terminal is coupled to the anode of the rectifier, the second and the third terminals are respectively coupled to the gate terminals of the first and second transistors, and the fourth terminal is coupled to the cathode or a voltage coupling circuit coupled to the gate terminals of the first and second transistors in combination with the other claim limitations.

6. Claims 2-12 and 27-49 are dependent on allowable Claims 1,26 and 38 and therefore allowable.

**Contact information**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Boris Benenson whose telephone number is (703) 305-6917. The examiner can normally be reached on M-F (8:20-6:00) First Friday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Brian Sircus can be

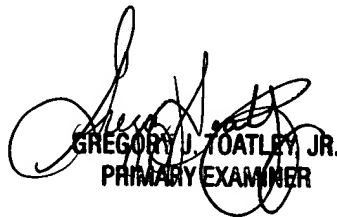
Art Unit: 2836

reached on (703) 308-3119. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 308-7722 for regular communications and (703) 308-7722 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.

Boris Benenson  
Examiner  
Art Unit 2836

B.B.  
July 31, 2003

  
GREGORY J. TOATLEY JR.  
PRIMARY EXAMINER